
GEOLOGY NEWSLETTER

JANUARY 1984⁵

BLOOMINGTON, INDIANA

**INDIANA
UNIVERSITY**

A MESSAGE FROM THE CHAIRMAN

Dear I. U. Geology Alumni and Friends:

This past year and the current year 1983 have been very busy and very rewarding for the Department of Geology. This fall we have a record number of graduate students (103) and a slightly lower number of undergraduate majors, which is probably a reflection of the economic conditions in the petroleum industry. Our faculty and graduate students have been very active in producing important research and giving papers at national and regional meetings. This past year we have purchased an inductively coupled plasma spectrometer to enhance our chemical analytical capabilities and in conjunction with the Biology Department have purchased a scanning electron microscope with quantitative chemical analysis capability. Through the generosity of Lester Logue and other alumni contributors, we are at last able to order closed-circuit telemetry equipment that will be mounted on a petrographic microscope modified for the purpose and that will allow lecture and demonstration material to be prepared in advance and used repetitively. The new facilities will be a substantial teaching aid for optical mineralogy, petrology, and other fields. This latter piece of equipment was purchased with funds donated by alumni contributors. Such contributions are extremely important to the department in order to make geology at Indiana better than ever. This fall the department has purchased six word processors for use by the departmental secretaries, faculty, and graduate students. Funds for this purchase were donated by a private foundation. Professor Judson Mead retired at the end of the 1982/83 academic year and Dr. Gary Pavlis, a recent geophysics graduate of the University of Washington, has been added to our faculty. We have been authorized to hire an igneous petrologist to replace Dr. Charles Vitaliano, who retired three years ago, beginning with the 1984/85 academic year. Within the next three years we will have four additional retirements: Professors Robert Blakely, Warren Meinschein, John Patton, and Robert Ruhe, so you can realize that the department will change very much in a relatively short period of time. I can assure you that we will continue to strive for excellence. This will be my last message to you as chairman of the department. I have been chairman now for eleven years and have informed the Dean of the College that I believe it is time for a change. I have been very proud to serve as chairman of the Department of Geology at Indiana University and I will continue now for at least the next five years to serve the department primarily as a teacher and a researcher. Professor Gary Lane will take over as chairman on July 1, 1984. I hope all of you will have an opportunity in the near future to visit your alma mater and to see firsthand what a fine Department of Geology we have at Indiana University.

Sincerely,

Haydn H. Murray

WHAT'S NEW IN THE DEPARTMENT

INTERNATIONAL ACTIVITIES

Abhijit Basu, Associate Professor, presented papers at the Quadrennial Congress of International Sedimentology Association in Canada, August of 1982, and at the annual meeting of the Meteorological Society in Mainz, West Germany, in September 1983. In December 1983, Dr. Basu went to India to collect basalts and their weathering products for a research project.

John Hayes, Professor of Chemistry and Geology, made several international trips including a field trip to Western Australia in June 1982 with the Precambrian Paleobiology Research group to sample sediments of Archean and Proterozoic ages. On July 18-24, 1982, John visited the Institute of Geological Sciences in London and then went on to Bremen, West Germany, to consult for Finnigan, MAT, a manufacturer of isotope-ratio mass spectrometers. John went to Caracas and Maracaibo, Venezuela, in August 1982 to confer with members of the Venezuelan Federal Petroleum Research Organization and to participate in field work at Lake Maracaibo with his Ph.D. student Luis Vierma. In September 1982, John presented a plenary lecture on the terrestrial carbon cycle to the annual meeting of the Societa Chemica d'Italiana. In January 1982, John again went to Bremen, West Germany, to consult with Finnigan, MAT, and also visited colleagues at the Federal Institute for Geological Sciences and Natural Resources.

Donald E. Hattin, Professor of Geology, attended the "First Symposium on Geology of the Bahamas" at San Salvador Island in the Bahamas. He presented a paper on "Holocene Lithification of Carbonate Sediments". Don teaches a two-weeks summer field course in San Salvador.

Cornelis Klein, Professor of Geology, spent two weeks in the summer of 1982 in South Africa studying the sediments of the Proterozoic Transvaal Supergroup and three weeks in Western Australia on the same field trip that John Hayes attended sampling some of the oldest known sedimentary rocks. In South Africa, Professor Klein lectured on banded iron formations at Rand Afrikaans University in Johannesburg and on recent developments in mineralogy to the Mineralogical Society of South Africa. In August 1983, Professor Klein participated in a NASA workshop on Archean Geochemistry in Ottawa, Canada.

Noel Krothe, Associate Professor of Geology, presented a paper in Sydney, Australia, in December 1983 at the International Ground Water Conference. Dr. Krothe will be on sabbatical leave in Italy during the second semester 1983-84 studying the thermal karst region of central Italy.

Haydn H. Murray, Department of Geology Chairman, has been involved in a U. S. AID project in Egypt as a consultant to the Egyptian National Research Center to evaluate Egyptian bentonite deposits. Dr. Murray made three trips to Cairo in the last 18 months and has one more trip scheduled for June 1984. Dr. Murray is also a consultant to ADARO in Madrid, Spain. ADARO is the Spanish government industrial minerals exploration and development group. He made two trips to Spain evaluating a kaolin project in the state of Guadalajara. In February 1983, Dr. Murray spent a week in Morocco sampling and evaluating

bentonite deposits for Lowe's, Inc., a producer of adsorbent clays. In June 1983, he spent a week in Suriname evaluating a large kaolin deposit for the Aluminum Company of America. In September 1983, Dr. Murray was invited by the Shantou provincial government to spend a week in China evaluating a large kaolin deposit near Swatow. While in China he lectured to the geology and engineering faculty at the South China Institute of Technology at Guangzhou on industrial applications of kaolin.

Gary L. Pavlis, Assistant Professor of Geology, was a delegate to the XVIII General Assembly of the International Union of Geodesy and Geophysics in Hamburg, West Germany, in August 1983. Gary presented a paper entitled "A Computer implementation of progressive inversion and multiple event location."

Robert V. Ruhe, Professor of Geology, went to Rwanda, Africa, in July 1982 to establish a soil survey. He was a consultant to the office of International Cooperation and Development, U.S. Department of Agriculture.

Lee J. Suttner, Professor of Geology, presented a paper at the 11th International Congress on Sedimentology in Hamilton, Ontario, in August 1982 entitled "Sandstone Petrology as an Indicator of Provenance and Paleoclimate."

Robert P. Wintsch, Associate Professor of Geology, was on sabbatical leave in Switzerland and England in 1981-82 and presented two papers at the International Conference on Rock Fabric in Zurich in August 1982. He presented a paper in Dublin, Ireland, at the Hercynian Deformation in the North Atlantic Conference in September 1982.

MORE FACULTY NEWS

Dr. Robert F. Blakely was promoted to full professor effective July 1983.

Dr. Donald D. Carr, Adjunct Professor, was appointed by the governor to membership on the Coal Study Committee of the Indiana Energy Development Board, and this fall was made a distinguished member of the Society of Mining Engineers.

Jeremy Dunning, Assistant Professor of Geology, organized and chaired a session on Chemistry of Interfaces at a Gordon Research Conference in the summer of 1983.

Dr. John Hayes was chairman of a Gordon Conference on the Chemistry and Physics of Isotopes that was held in Santa Barbara, California, in February 1983.

Dr. Cornelis Klein organized an annual workshop of the Precambrian Paleobiology Research Group which was held at Indiana University in February 1983.

Dr. Noel Krothe was elected president of the Indiana Water Resources Association and was chairman of the Hydrogeology Division for the GSA annual meeting in Indianapolis.

Professor N. Gary Lane was appointed chairman of the department effective July 1, 1984 by the dean of the College of Arts and Sciences. Gary received his A.B. degree from Oberlin College and his M.S. and Ph.D. degrees from the University of Kansas. In 1958 Gary joined the faculty at UCLA where he remained until 1973 when he was hired at I.U. to fill the vacancy caused by Tom Perry's death. Gary's major research interests involve Mississippian crinoids and he is considered one of the world authorities on this fossil group.

Dr. Haydn H. Murray was elected to the council of the Geological Society of America through 1984 and is a member of the GSA executive committee as a result of his appointment as chairman of the budget committee. He is chairman of the nominations committee for GSA for 1984. He is past chairman of the Industrial Minerals Division of the Society of Mining Engineers and is on the Board of Directors of SME through 1985. He was appointed to the U.S. National Committee for the International Geological Correlation Program to serve through 1986. This is a National Academy of Sciences committee. He also serves on the Task Force for Industrial By-Products of the Indiana Corporation for Science and Technology. He was chairman of the technical program for the GSA annual meeting in Indianapolis October 31-November 3, 1983.

Enrique Merino, Associate Professor of Geology, gave an invited lecture "Survey of geochemical patterning phenomena" at an International NATO workshop on chemical instabilities with applications in chemistry, engineering, geology, and material science at Austin, Texas, in March 1983.

Dr. John B. Patton was honored by AAPG at their annual meeting in Dallas in 1983 where he received the Public Service Award. This honor certainly is well deserved because of John's outstanding service to the public, the state of Indiana, Indiana University, and geology. John represents the Director of the Indiana Department of Natural Resources in the Indiana Energy Development Board and the Technical Advisory Committee of the Solid Waste Facility Site Approval Authority. He is chairman of the Centennial Committee for the Indiana Academy of Science.

Gary L. Pavlis joined the faculty in August 1983 as an assistant professor of geophysics. Gary's specialty in geophysics is seismology and specifically inverse theory as applied to locating earthquakes. He also is interested in the measurement of in situ physical properties by vertical seismic profiling and cross borehole measurements and in fracture mechanics. He plans to use methods from geophysical inverse theory to study the physics of dynamic fracturing. Gary was awarded an NSF grant in December 1983 entitled "Practical Methods of Imaging Earthquake Hypocenters in Laterally Varying Media". Gary grew up in South Dakota and attended South Dakota State University where he graduated with highest honors in engineering physics. He did his graduate work in geophysics at the University of Washington in Seattle where he received his Ph.D. in 1982. Gary's wife, Mary, and their three small children are adapting to Bloomington. We are most pleased to have Gary as a member of the faculty.

Dr. Robert H. Shaver was the field trip chairman for the 1983 GSA annual meeting in Indianapolis and organized 16 trips and edited the two volumes of field trip guides.

Dr. Lee J. Suttner was appointed the director of the Indiana University Geologic Field Station in Montana. He also was appointed to a three-year term as associate editor of the Journal of Sedimentary Petrology and is past-president of the National Association of Geology Teachers.

FIELD STATION NEWS

A new research seminar program has been added to the field station curriculum. The objective of the seminars is to bring together a group of graduate students who, as a team and under the direction of a well-known visiting scientist, will carry on intensive field research on some aspect of the geology of southwest

Montana. The first seminar program was led in 1983 by Dr. Harry Smedes, one of the leading experts on the geology of the Boulder Batholith and surrounding areas. The topic was "The Kinematics of Laramide Tectonics in Southwest Montana".

As noted in the industrial fellowships and grants to the department, Chevron U.S.A. gave a sizeable sum of money to the field program, for which we are extremely grateful.

Jackie Case has replaced Kathy Martindale as the on-campus field station secretary. Kathy resigned in August 1983 and is now the proud parent of a bouncing baby boy.

Gene Hinton, the resident manager of the field station was hospitalized for several weeks in 1982 but after a winter and spring of recuperation, he was at full strength and in good health throughout last summer's program.

JUDSON MEAD FIELD STATION FUND

Professor Judson Mead retired in 1983 and we all owe him a great deal because of his major contributions to our department. He joined the faculty at Indiana University in 1949 and quickly established a strong geophysics program that attracted recruiters from industry, research organizations, and academic institutions to employ our graduates as professional geophysicists. Professor Mead was director of the field station from 1961 to 1981 until he insisted on turning the reins over to his successor, Professor Lee Suttner. Because of his dedication to standards of excellence and his outstanding leadership, the I.U. field station has become the best in the country. More than 1700 students completed the field course G-429 during Professor Mead's directorship. The National Association of Geology Teachers named him the 1979 recipient of the Neil Miner Award, their highest honor in American geology for "exceptional contributions to the stimulation of interest in the earth sciences." Jud plans to remain in Bloomington and will work on some interesting geophysical research problems in the coming years because for the first time in his career he says he now has time to solve some interesting research problems. Even though he has retired, we will continue to have access to his advice from which we have benefited so much during his thirty-four years at Indiana University.

In Professor Judson Mead's honor the Department of Geology has established a Judson Mead Field Station Fund with the Indiana University Foundation. This fund will be used to support students and to purchase capital items needed at the field station, but will not be used for operations. Even though the fund was just recently announced, several of our alumni have already contributed including Dick Gibson, Jack Riddell, Mike Cowan, Marion Stallard, Jack L. Nelson, Michael McLane, and Dan Tudor. If you wish to contribute to this fund, we have attached an envelope whereby you can return your contribution to this or one of our other established funds. We urgently need your contributions whatever the amount you feel you can give, be it large or small, because these funds contribute to making the difference between mediocrity and excellence in the department.

STUDENT AWARDS

Each year the department honors its outstanding undergraduates and graduate students. The awards and the recipients for 1982-83 are as follows:

Undergraduates

Faculty Scholarship Award - Sean Rooney (Brunton Compass)
Junior Year Award - Kenneth Kudrak (\$400)
Chevron Undergraduate Scholarships - Brad White (\$1000)
John Griggs (\$1000)
Charles Deiss Field Camp Fellowship - Gary D. Acton (\$200)

Graduates

Chevron Fellowship in Geophysics - Neil Hokanson
Shell Fellowship - Gregory Berkhouse
Grassmann Fellowship in Industrial Minerals - Timothy Salter
Lowe's Fellowship in Industrial Minerals - Allen Brockman
Graduate School Fellowship - Alan Kaufman
U.S. Dept. of Education Graduate Fellowship - Jennifer Hill
Janet Peters
Kim Nelson

DEPARTMENT PARTICIPATION AT GSA

The annual meeting of the Geological Society of America was held in Indianapolis October 31-November 4, 1983. Many faculty members and students worked hard to make the meeting very successful. Haydn Murray was Technical Program Chairman and organized the symposia and technical sessions. Robert Shaver was the field trip chairman and did a yeoman's job in editing the field trip guidebooks. J. Robert Dodd was responsible for organizing and directing the student help for operating the projectors, helping the session chairmen, etc., and worked harder than most anyone at the meeting. Cornelis Klein was co-chairman for arranging the Mineralogical Society of America activities. Noel Krothe was chairman of the hydrogeology division activities. N. Gary Lane led a field trip on the stratigraphy and paleontology of the Borden group with the help of Bill Ausich (Ph.D. 1979) and Tom Kammer (Ph.D. 1982). John B. Patton led a field trip with co-leader Don Carr to the Indiana building limestone district and conducted a walking tour of New Harmony for the History of Geology Division. Edward Ripley was assistant chairman of the Society of Economic Geology activities. Many of the I.U. graduate students worked at the meeting and did an outstanding job. The GSA staff in Boulder said it was the best organized GSA ever and that certainly speaks well for our staff and students who made major contributions.

ALUMNI NEWS

Talal Abdulkareem (Ph.D. 1982), following completion of his doctoral degree Talal returned to Iraq, did a stint in the armed services, and is now teaching general and petroleum geology courses at Sallahadin University at Erbil, Iraq.

Sigrid (Bolinder) Asher (B.S. 1972) has been elected editor for the Association of Women Geoscientists. She is employed with the USGS in Denver.

William Ausich (Ph.D. 1979) Associate Professor of Geology at Wright State University in Dayton, Ohio, is chairman of the North Central Section of GSA for 1984.

Donald Aung Ba (MAT 1956) is "on the road to Mandalay" in January 1984 for an approximate three-year assignment as a team leader and hydrogeological consultant on a city water supply project. He is very proud that an I.U. alumnus is the first person to hold such a position in his country, and expresses his gratitude to the faculty members who trained him. And can you imagine doing field work on crutches in the terrane of central Burma? But it was necessary because he was in charge of the search for water during a severe draught. Several years ago he developed difficulty and nearly lost his right leg. A recent operation has improved his condition considerably.

Paul B. Basan (A.B. 1965) is now vice-president and general manager for ERCO Petroleum Services Inc., in Houston, Texas.

Jeanette Bauman (A.M. 1978) has joined Superior Oil Company in Denver. Jeanette was formerly with Chevron U.S.A. in Denver.

Kennard B. Bork (Ph.D. 1967) Professor of Geology at Denison University in Granville, Ohio, received the "Paper of the Year for 1982" award from the Ohio Academy of Science for his paper entitled "Kirtley Fletcher Mather's Life in Science and Society." Ken is also editor of the new international journal History of Geology.

Arthur Brookley, Jr. (A.M. 1955) has recovered from two slight heart attacks in 1983 but is now back consulting full time after making a good recovery. Art works out of Ventura, California.

Paul Brulla (A.M. 1980) has joined Champlin Petroleum Company in Houston. He was formerly with Texaco in Midland, Texas.

George Brunton (Ph.D. 1958) is chairman of the Department of Geology at the University of Mississippi in Oxford, Mississippi. George was formerly at Battelle Institute of Columbus, Ohio.

John Bubb (Ph.D. 1963), after eight years in Malaysia, was transferred by Exxon to England in August 1982. The Bubb family now resides in Surrey, just outside of London.

Pei-Yuan Chen (A.M. 1957) is now employed by the Institute of Earth Sciences, Academia Sinica in Taiwan. He formerly worked for Gulf Research in Pittsburgh.

Ward J. Collins (B.S. 1949) was named director of exploration for Citizen's Gas and Coke Utility of Indianapolis, in 1983. Prior to his promotion he was director of underground storage.

Peter S. Dahl (Ph.D. 1977) Associate Professor of Geology at Kent State University in Kent, Ohio, received a gold medal in 1982 in recognition for his work on orbicular granites in Antarctica. The medal was given by the National Science Foundation "In recognition of valuable contributions to exploration and scientific achievement under the U.S. Antarctic Research Program." Pete made two expeditions to Antarctica to map and sample these granites.

Thomas L. Dobecki (Ph.D. 1972) has joined Fracture Technology, Inc., in Palo Alto, California, as vice-president in charge of Technical Marketing and Development.

George Ericksen (A.M. 1949) who is with the USGS Branch of Eastern Mineral Resources in Reston, Virginia, was made a Knight Commander of Chile's Order of Bernardo O'Higgins at an elegant ceremony in Santiago on June 9, 1983. The Chilean minister of mines, Samuel Liva Ovalle, presented the award to honor George's outstanding contributions to mining geology and mineral resource assessment.

Lowell E. Gladish (B.S. 1949) was named director of underground storage for Citizen's Gas to replace Collins. He had been assistant director and general supervisor of underground storage operations.

Scott B. Gorham (B.S. 1978) and Susan R. Elder (B.S. 1978) were married July 10, 1982, in Springfield, Ohio. Scott is a geophysicist with Exxon, USA, and Susan is a geologist with Hunt Oil Co., both located in Denver, Colorado.

Seymour S. Greenburg (A.M. 1953; Ph.D. 1959) chairman and professor at West Chester State University in Pennsylvania is the chairman of the Northeast Section of GSA for 1984.

G. K. Guennel (Ph.D. 1960, Botany) has retired from Marathon Oil Company in Denver and is now enjoying a life of leisure in Denver. He would love to hear from his old friends.

James Richard Harris (A.B. 1951) is now director of the Office of Surface Mining in Washington, D. C. Dick was formerly a representative and then a state senator in Indiana. We are very proud of the accomplishments of Dick Harris and his support of Indiana University.

Ronald S. Hattin (B.S. 1978) received his M.D. degree in 1983 and is now interning at Wishard Hospital in Indianapolis.

W. Calvin James (Ph.D. 1977) is now teaching at the University of Texas-El Paso. Cal is married to Elise Porter, who just recently finished her Ph.D. at I.U., where she worked on the gold deposits at the Sunlight Mine near the field station in Montana.

Stan Kent (A.M. 1967) was in the news in October 1983 as a member of a mountain climbing team that attempted to scale one of the highest peaks in the world - Ganesh Himal IV in the Himalayas. Kent currently practices law in Colorado Springs, Colorado.

Lawrence R. Lebauer (Ph.D. 1962) is now vice-president with Continental Ores in New York City. Larry was formerly with General Refractories in Philadelphia.

Daniel L. McGrew (D.D.S. (B.S. 1974) is now practicing dentistry in Danville, Indiana. He and his wife Karen have two daughters.

Al Miesch (A.M. 1954), a research geologist with the USGS Branch of Exploration and Geochemistry in Grand Junction, Colorado, received a Distinguished Service Award, the highest honor given by the U.S. Department of the Interior from Secretary of the Interior, James Watt, in an awards convocation in Washington, D. C., on September 30, 1983. In presenting the award, Watt referred to Miesch as "an international authority in the area of computer-based analysis of geologic data who is recognized throughout the scientific community as one of the pioneers in the integration of statistical and geochemical concepts."

William F. Moll (A.M. 1958) has joined Oil-Dri Corporation in Chicago as Director of Research. Bill was formerly with Cabot Corp. in Tuscola, Illinois.

Richard Munson (MAT 1966) was a recipient of an outstanding Earth Science Teacher Award at the 1982 annual meeting of the National Association of Geology Teachers. He was also the regional winner in the East Central Section. Dick teaches earth science at Thurston High School in Redford, Michigan.

George Nevers (A.M. 1957) was appointed executive vice-president of Marlene Oil Corporation in Houston, Texas. George formerly was senior vice-president of Coastal Corporation in Houston.

Carolyn G. Olson (Ph.D. 1979) has transferred from the USGS offices in Menlo Park, California, to the USGS in Reston, Virginia, where she is working on Appalachian soils in Virginia and North Carolina.

Dan Rimstidt (A.M. 1974) has been transferred by Old Ben Coal Company to their marketing department in Chicago. Dan was formerly located at Newburgh, Indiana.

Larry Rooney (Ph.D. 1956) is the new chief, Branch of Western Technical Reports, for the USGS and is based in Menlo Park, California. Larry and his wife Buddy (Rosalia Rey, A.B. 1955; A.M. 1956) spent the past several years in Saudi Arabia inventorying non-metallic mineral deposits and as chief of the Technical Reports Unit for the USGS Saudi Arabian Mission. Their son Sean Rooney received his B.S. degree in geology at Indiana University in 1982 and is now a graduate student in geophysics at the University of Wisconsin.

Thomas J. Schull (A.M. 1966) has been named district supervisor, Western Region Exploration, for Chevron U.S.A. in Concord, California.

Don C. Steinker (B.S. 1959) has been elected northeastern vice-president of Sigma Gamma Epsilon. Don teaches in the Department of Geology at Bowling Green State University in Bowling Green, Ohio.

Max Tilford (A.M. 1978) has joined Bass Oil Company in Oklahoma City. He formerly was employed by Exxon in the same city.

Dan Tudor (A.M. 1957; Ph.D. 1971) is vice-president of Chevron Geophysical in Houston. Congratulations, Dan.

Mark Wiechman (A.M. 1980) has returned to graduate school at Johns Hopkins University for his Ph.D. Mark was formerly with Exxon in Corpus Christi, Texas.

Larry Woodfork (A.M. 1965) is president of the American Institute of Professional Geologists. Larry is with the West Virginia Geological and Economic Survey in Morgantown, West Virginia.

ALUMNI DEATHS

Thomas M. Bryce	1/3/84	(A.B. 1942)
Cornelius M. Connelly	2/26/82	(A.B. 1950)
Raymond L. George	12/29/81	(B.S. 1951)
Robert B. Grasjean	6/25/83	(A.B. 1932)
Robert A. Hall	2/17/81	(A.B. 1925)
Joseph R. Lagro	12/15/77	(A.B. 1951)
Raymond C. Mullen	10/10/75	(A.B. 1931)
James K. Niehaus	10/7/82	(A.B. 1950)
Lilburn H. Seamon	11/23/82	(A.B. 1927)
Iris Gilman Stanger	6/20/83	(A.B. 1928)
Elmer L. Wegner	10/13/82	(A.B. 1937)



ALUMNI ADVISORY COUNCIL

Wayne Bundy, Robert Blakely, Charles Wier, Dick Gibson, Marcia Engle, Wayne Fowler, Ray Pheifer, Art Fritz, John Patton, Doug Reynolds, Dan Tudor, Haydn Murray, and the person hidden behind Charles Wier is Bob Dodd.

The picture above was taken at our Alumni Council meeting which was held in November 1982. We held another Council meeting on January 27 and 28, 1984. We had a very good meeting and the Council members got to see Indiana beat Iowa and Northwestern in basketball. The present members of the Council are listed below. We receive a great deal of help and encouragement from this advisory group. We were able to employ an immediate replacement for Jud Mead and to get permission to replace Charles Vitaliano with an igneous petrologist beginning with the 1984/85 academic year in part because of help exerted by the Council.

JUNE 1984

Wayne Fowler
Arthur Fritz
John Patton
Ray Pheifer
Charles Wier

JUNE 1985

Stephanie Hrabar
Frank Kottowski
Douglas W. Reynolds
Daniel Tudor
Larry Woodfork

JUNE 1986

Jeanette Bauman
Wayne Bundy
Marcia Engle
Richard Gibson
Frank Pruett

CONTRIBUTIONS

Enclosed with this newsletter is an envelope for your convenience if you wish to contribute to one of the following funds. Please designate on the envelope to which Geology Department fund you wish to contribute.

GEOLOGY DEPARTMENT FUND

CHARLES DEISS FUND

JUDSON MEAD FIELD STATION FUND

ARCH MCPHEETERS FUND

EXCELLENCE IN GEOLOGY FUND

WILLIAM RAWLES FUND

GALLOWAY-PERRY FUND

WILLIAM THORNBURY FUND

CUMINGS-MALOTT FUND

RALPH ESAREY FUND

PLEASE MAKE CHECK PAYABLE TO: INDIANA UNIVERSITY FOUNDATION/ _____ FUND